Oitava Lista de Exercícios - Matemática II/Contábeis - Prof. Luiz Felipe - 2016/1º

1) Calcule:

a)
$$\lim_{x \to \infty} \frac{100000}{x^3}$$

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$$\lim_{x \to \infty} \frac{100000}{x^3}$$
 b) $\lim_{x \to \infty} \left(\frac{1}{\sqrt{3x+2}} - 4 \right)$ c) $\lim_{x \to \infty} \left(2 + \frac{x^2}{e^{5x}} \right)$ d) $\lim_{x \to -\infty} 1 - e^{4x}$

c)
$$\lim_{x \to \infty} \left(2 + \frac{x^2}{e^{5x}} \right)$$

d)
$$\lim_{x \to -\infty} 1 - e^{4x}$$

2) Calcule:

a)
$$\int_{2}^{\infty} \frac{1}{(1+2x)^{2}} dx$$
 b) $\int_{0}^{\infty} xe^{-2x} dx$ c) $\int_{5}^{\infty} e^{3x} dx$ d) $\int_{0}^{\infty} \frac{dx}{\sqrt{e^{x}}}$

b)
$$\int_0^\infty xe^{-2x}dx$$

c)
$$\int_{5}^{\infty} e^{3x} dx$$

d)
$$\int_0^\infty \frac{dx}{\sqrt{e^x}}$$

3) Calcule:

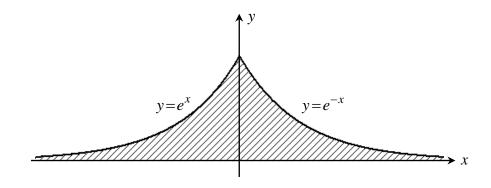
a)
$$\int_{-\infty}^{-2} \frac{4}{x^3} dx$$

b)
$$\int_{-\infty}^{1} x^2 dx$$

b)
$$\int_{-\infty}^{1} x^2 dx$$
 c) $\int_{-\infty}^{\infty} \frac{x}{\sqrt{1+x^2}} dx$ d) $\int_{-\infty}^{\infty} x^3 e^{-x^4} dx$

$$d) \int_{-\infty}^{\infty} x^3 e^{-x^4} dx$$

4) Encontre a área da região ilimitada (à esquerda e à direita) situada entre o eixo x e as curvas indicadas no desenho abaixo:



Respostas:

1) a) 0 b)
$$-4$$
 c) 2 d) 1.

2) a)
$$\frac{1}{10}$$
 b) $\frac{1}{4}$ c) Integral divergente d) 2.

3) a)
$$-\frac{1}{2}$$
 b) Integral divergence c) Integral divergence d) 0.

4) 2.